ESET NOD32 Antivirus 4

for Linux Desktop

Installation Manual and User Guide

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ESET NOD32 Antivirus 4

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Contents

1. ESET NOD32 Antivirus....4
1.1 System requirements....4
2. Installation....4
2.1 Typical installation....4
2.2 Custom installation....4
2.3 Product activation....5
2.4 On-demand computer scan....5
3. Beginners guide....5
3.1 User interface....5
3.1.1 Checking operation of the system....6
3.1.2 What to do if the program doesn't work properly....6
4. Work with ESET NOD32 Antivirus....6
4.1 Antivirus and antispyware protection....6
4.1.1 Real-time file system protection....6
4.1.1.1 Real-time Protection setup....6
4.1.1.1.1 Scan on (Event triggered scanning)....7
4.1.1.1.2 Advanced scan options....7
4.1.1.1.3 Exclusions from scanning....7
4.1.1.2 When to modify Real-time protection configuration....7
4.1.1.3 Checking Real-time protection....7
4.1.1.4 What to do if Real-time protection does not work....7
4.1.2 On-demand computer scan....8
4.1.2.1 Type of scan....8
4.1.2.1.1 Smart scan....8
4.1.2.1.2 Custom scan....8
4.1.2.2 Scan targets....8
4.1.2.3 Scan profiles....8
4.1.3 ThreatSense engine parameters setup....9
4.1.3.1 Objects....9
4.1.3.2 Options....10
4.1.3.3 Cleaning....10
4.1.3.4 Extensions....10
4.1.3.5 Limits....10
4.1.3.6 Others....10
4.1.4 An infiltration is detected....11
4.2 Updating the program....11
4.2.1 Upgrading to a new build....12
4.2.2 Update setup....12
4.2.3 How to create update tasks....12
4.3 Scheduler....12
4.3.1 Purpose of scheduling tasks....13
4.3.2 Creating new tasks....13
4.3.3 Creating user-defined task....13
4.4 Quarantine....13
4.4.1 Quarantining files....14
4.4.2 Restoring from Quarantine....14
4.4.3 Submitting file from Quarantine....14
4.5 Log files....14
4.5.1 Log maintenance....14
4.5.2 Log filtering....15
4.6 User interface....15
4.6.1 Alerts and notifications....15
4.6.1.1 Alerts and notifications advanced setup....15
4.6.2 Privileges....15
4.6.3 Context menu....16
4.7 ThreatSense.NET....16
4.7.1 Suspicious files....16
5. Advanced user....17
5.1 Import and export settings....17
5.1.1 Import settings....17
5.1.2 Export settings....17
5.2 Proxy server setup....17
5.3 Removable media blocking....17
6. Glossary....17
6.1 Types of infiltrations....17
6.1.1 Viruses....17
6.1.2 Worms....18
6.1.3 Trojan horses....18
6.1.4 Adware....18
6.1.5 Spyware....19
6.1.6 Potentially unsafe applications....19
6.1.7 Potentially unwanted applications....19

1. ESET NOD32 Antivirus

As the popularity of Unix-based operating systems increases, malware authors are developing more threats to target Linux users. ESET NOD32 Antivirus offers powerful and efficient protection against these emerging threats. ESET NOD32 Antivirus also includes the ability to deflect Windows threats, protecting Linux users as they interact with Windows users and vice versa. Although Windows malware does not pose a direct threat to Linux, disabling malware that has infected a Linux machine will prevent its spread to Windows-based computers through a local network or the Internet.

1.1 System requirements

For optimal performance of ESET NOD32 Antivirus, your system should meet the following hardware and software requirements:

ESET NOD32 Antivirus:

	System requirements
Processor architecture	32bit, 64bit AMD®, Intel®
System	Debian and RedHat based distributions (Ubuntu, OpenSuse, Fedora, Mandriva, RedHat etc.) kernel 2.6.x GNU C Library 2.3 or newer GTK+ 2.6 or newer LSB 3.1 compatibility recommended
Memory	512 MB
Free disk space	100 MB

2. Installation

Before you begin the installation process, please close all open programs on your computer. ESET NOD32 Antivirus contains components that may conflict with other antivirus programs that may already be installed on your computer. ESET strongly recommends that you remove any other antivirus programs to prevent potential problems. You can install ESET NOD32 Antivirus from an installation CD or from a file available on the ESET website.

To launch the installation wizard, do one of the following:

- If you are installing from the installation CD, insert the CD into the CD-ROM drive. Double-click on the ESET NOD32 Antivirus installation icon to launch the installer.
- If you are installing from a downloaded file, right-click the file, click **Properties > Permissions** tab, check the **Allow executing file as program** option and close the window. Double-click the file to launch the installer.

Launch the installer and the installation wizard will guide you through the basic setup. After agreeing to the End User License Agreement, you can choose from the following installation types:

- Typical installation 4
- Custom installation 4

2.1 Typical installation

Typical installation mode includes configuration options that are appropriate for most users. These settings provide maximum security combined with excellent system performance. Typical installation is the default option and is recommended if you do not have particular requirements for specific settings.

The **ThreatSense.NET Early Warning System** helps ensure that ESET is immediately and continuously informed of new infiltrations in order to quickly protect our customers. The system allows new threats to be submitted to the ESET Threat Lab, where they are analyzed, processed and added to the virus signature database. By default, the **Enable ThreatSense.NET Early Warning System** option is selected. Click **Setup...** to modify detailed settings for submitting suspicious files. (For more information see ThreatSense.NET 16).

The next step in the installation process is to configure the detection of **Potentially unwanted applications**. Potentially unwanted applications are not necessarily malicious, but can often negatively affect the behavior of your operating system. These applications are often bundled with other programs and may be difficult to notice during the installation process. Although these applications usually display a notification during installation, they can easily be installed without your consent.

Click **Install** to complete installation.

2.2 Custom installation

Custom installation mode is designed for experienced users who wish to modify advanced settings during the installation process.

If you are using a proxy server you can define its parameters now by selecting the **I use a proxy server** option. Enter the IP address or URL of your proxy server in the **Address** field. In the **Port** field, specify the port where the proxy server accepts connections (3128 by default). In the event that the proxy server requires authentication, enter a valid **Username** and **Password** to grant access to the proxy server. If you are sure that no proxy server is used, choose the **I do not use a proxy server** option.

In the next step you can **Define privileged users** that will be able to edit the program configuration. From the list of users on the left side, select the users and **Add** them to the **Privileged Users** list. To display all system users, select the **Show all users** option.

The **ThreatSense.NET Early Warning System** helps ensure that ESET is immediately and continuously informed of new infiltrations in order to quickly protect our customers. The

system allows new threats to be submitted to the ESET Threat Lab, where they are analyzed, processed and added to the virus signature database. By default, the **Enable ThreatSense.NET Early Warning System** option is selected. Click **Setup...** to modify detailed settings for the submission of suspicious files. For more information see ThreatSense.NET 16.

The next step in the installation process is to configure detection of **Potentially unwanted applications**. Potentially unwanted applications are not necessarily malicious, but can often negatively affect the behavior of your operating system. These applications are often bundled with other programs and may be difficult to notice during the installation process. Although these applications usually display a notification during installation, they can easily be installed without your consent.

Click **Install** to complete installation.

2.3 Product activation

You can activate your copy of ESET NOD32 Antivirus directly from the program. Click the ESET NOD32 Antivirus icon located in your menu bar (top of the screen) and then click **Product activation...**

1. If you purchased a retail boxed version of the product, it already contains an Activation Key along with step-by-step activation instructions. The Activation Key is usually located inside or on the back side of the product package. For a successful activation, the Activation Key must be entered as supplied.

2. If you received a Username and Password, select the **Activate using a Username and Password** option and enter the license data in the appropriate fields. This option is equivalent to the **Username and Password setup...** in the program Update window.

3. If you would like to evaluate ESET NOD32 Antivirus before making a purchase, select the **Activate Trial License** option. Fill in your name and **Email address** to activate ESET NOD32 Antivirus for a limited time. Your test license will be emailed to you. Trial licenses can only be activated once per customer.

If you do not have a license and would like to buy one, click the **Purchase License** option. This will redirect you to the website of your local ESET distributor.

2.4 On-demand computer scan

After installing ESET NOD32 Antivirus, you should perform a computer scan for malicious code. From the main program window, click **Computer scan** and then click **Smart scan**. For more information about On-demand computer scans, see the section On-demand computer scan 8.

3. Beginners guide

This chapter provides an initial overview of ESET NOD32 Antivirus and its basic settings.

3.1 User interface

The main program window of ESET NOD32 Antivirus is divided into two main sections. The primary window on the right displays information that corresponds to the option selected from the main menu on the left.

The following is a description of options within the main menu:

- **Protection status** – Provides information about the protection status of ESET NOD32 Antivirus. If **Advanced mode** is activated, the **Statistics** submenu will display.
- **Computer scan** – This option allows you to configure and launch the **On-demand computer scan**.
- **Update** – Displays information about updates to the virus signature database.
- **Setup** – Select this option to adjust your computer's security level. If **Advanced mode** is activated, the **Antivirus and antispyware** submenu will display.
- **Tools** – Provides access to **Log files**, **Quarantine** and **Scheduler**. This option only displays in **Advanced mode**.
- **Help** – Provides program information, access to help files, Internet Knowledgebase and ESET website.

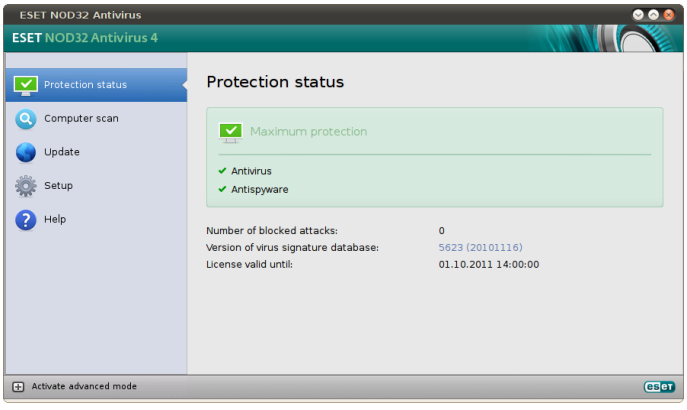
The ESET NOD32 Antivirus user interface allows users to toggle between Standard and Advanced mode. Standard mode provides access to features required for common operations. It does not display any advanced options. To toggle between modes, click the plus icon (**+**) next to **Activate advanced mode /Activate standard mode** in the bottom left corner of the main program window.

The Standard mode provides access to features required for common operations. It does not display any advanced options.

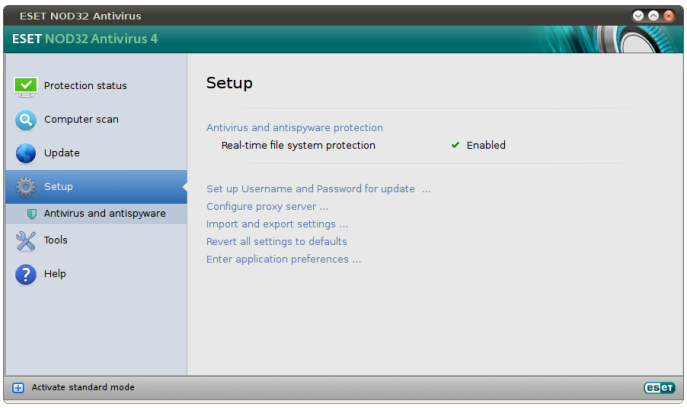
Toggling to Advanced mode adds the **Tools** option to the main menu. The **Tools** option allows you to access the submenus for **Log files**, **Quarantine** and **Scheduler**.

NOTE: All remaining instructions in this guide take place in **Advanced mode**.

Standard mode:

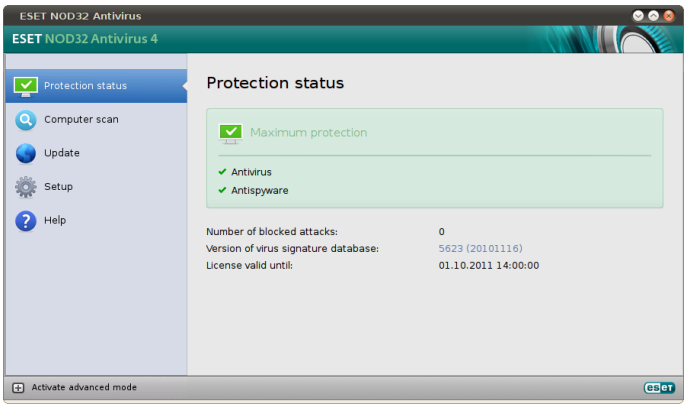


Advanced mode:



3.1.1 Checking operation of the system

To view the **Protection status**, click the top option from the main menu. A status summary about the operation of ESET NOD32 Antivirus will display in the primary window as well as a submenu with **Statistics**. Select it to view more detailed information and statistics about computer scans that have been performed on your system. The Statistics window is available only in advanced mode.

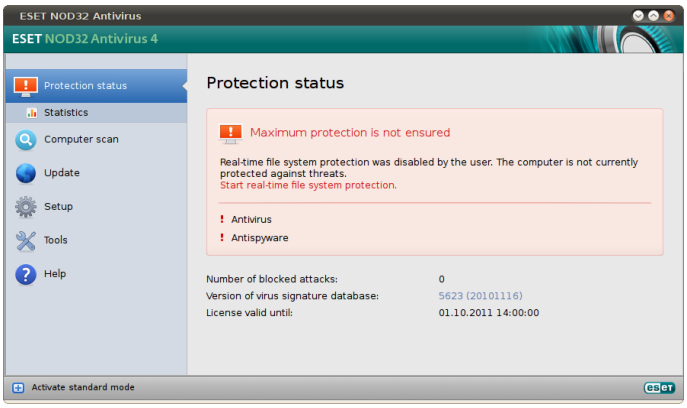


3.1.2 What to do if the program doesn't work properly

If the modules enabled are working properly, they are assigned a green check icon. If not, a red exclamation point or orange notification icon is displayed, and additional information about the module is shown in the upper part of the window. A suggested solution for fixing the module is also displayed. To change the status of individual modules, click **Setup** in the main menu and click on the desired module.

If you are unable to solve a problem using the suggested solutions, click **Help** to access the help files or search the Knowledgebase.

If you need assistance, you can contact ESET Customer Care support on the ESET website. ESET Customer Care will respond quickly to your questions and help determine a resolution.



4. Work with ESET NOD32 Antivirus

4.1 Antivirus and antispyware protection

Antivirus protection guards against malicious system attacks by modifying files that pose potential threats. If a threat with malicious code is detected, the Antivirus module can eliminate it by blocking it and then cleaning it, deleting it or moving it to quarantine.

4.1.1 Real-time file system protection

Real-time file system protection controls all antivirus-related events in the system. All files are scanned for malicious code when they are opened, created or run on your computer. Real-time file system protection is launched at system startup.

4.1.1.1 Real-time Protection setup

Real-time file system protection checks all types of media and triggers a scan based on various events. Using ThreatSense technology detection methods (described in the section titled ThreatSense engine parameter setup 9), Real-time file system protection may vary for newly created files and existing files. For newly created files, it is possible to apply a deeper level of control.

By default, Real-time protection launches at system startup and provides uninterrupted scanning. In special cases (e.g., if there is a conflict with another Real-time scanner), Real-time protection can be terminated by clicking the ESET NOD32 Antivirus icon located in your menu bar (top of the screen) and then selecting the **Disable Real-time File System Protection** option. Real-time protection can also be terminated from the main program window (**Setup** > **Antivirus and Antispyware** > **Disable**).

To modify advanced settings of the Real-time protection, go to **Setup** > **Enter application preferences ...** > **Protection** > **Real-Time Protection** and click the **Setup...** button next to **Advanced Options** (described in the section titled Advanced scan options 7).

4.1.1.1.1 Scan on (Event triggered scanning)

By default, all files are scanned upon **File opening**, **File creation** or **File execution**. We recommend that you keep the default settings, as these provide the maximum level of Real-time protection for your computer.

4.1.1.1.2 Advanced scan options

In this window you can define object types to be scanned by the ThreatSense engine and enable/disable **Advanced heuristics** as well as modify settings for archives and file cache.

We do not recommend changing the default values in the **Default archives settings** section unless needed to resolve a specific issue, as higher archive nesting values can impede system performance.

You can toggle ThreatSense Advanced heuristics scanning for executed, created and modified files separately by clicking the **Advanced heuristics** checkbox in each of the respective ThreatSense parameters sections.

To provide the minimum system footprint when using Real-time protection, you can define the size of the optimization cache. This behavior is active when you are using the **Enable clean file cache** option. If this is disabled, all files are scanned each time they are accessed. Files will not be scanned repeatedly after being cached (unless they have been modified), up to the defined size of the cache. Files are scanned again immediately after each virus signature database update.

Click **Enable clean file cache** to enable/disable this function. To set the amount of files to be cached simply enter the desired value in the input field next to **Cache size**.

Additional scanning parameters can be set in the **ThreatSense Engine Setup** window. You can define what type of **Objects** should be scanned, using which **Options** and **Cleaning** level, as well as defining **Extensions** and file-size **Limits** for Real-time file system protection. You can enter the ThreatSense engine setup window by clicking the **Setup...** button next to **ThreatSense Engine** in the Advanced Setup window. For more detailed information about ThreatSense engine parameters see ThreatSense engine parameter setup 9.

4.1.1.1.3 Exclusions from scanning

This section enables you to exclude certain files and folders from scanning.

- **Path** - path to excluded files and folders
- **Threat** - if there is a name of a threat next to an excluded file, it means that the file is only excluded for the given threat, but not completely. Therefore, if that file becomes infected later with other malware, it will be detected by the antivirus module.
- **Add...** - excludes objects from detection. Enter the path to an object (you can also use wildcards * and ?) or select the folder or file from the tree structure.
- **Edit...** - enables you to edit selected entries
- **Remove** - removes selected entries
- **Default** - cancels all exclusions.

4.1.1.2 When to modify Real-time protection configuration

Real-time protection is the most essential component of maintaining a secure system. Use caution when modifying the Real-time protection parameters. We recommend that you only modify these parameters in specific cases. For example, a situation in which there is a conflict with a certain application or Real-time scanner of another antivirus program.

After installing ESET NOD32 Antivirus, all settings are optimized to provide the maximum level of system security for users. To restore the default settings, click the **Default** button located at the bottom-left of the **Real-Time Protection** window (**Setup** > **Enter application preferences ...** > **Protection** > **Real-Time Protection**).

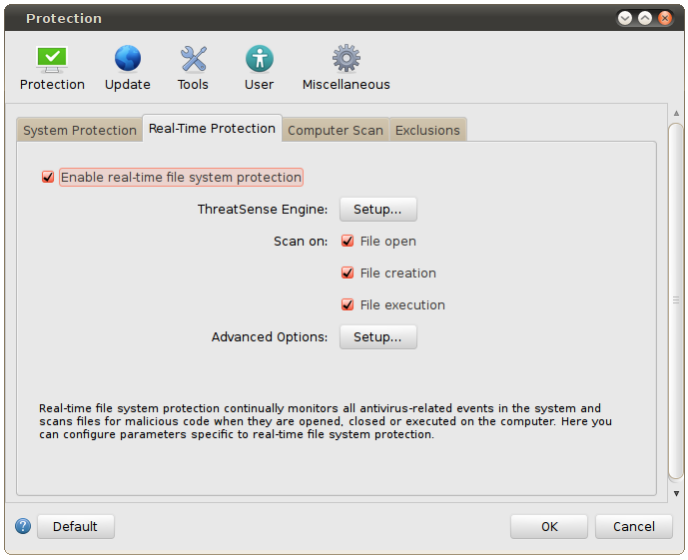
4.1.1.3 Checking Real-time protection

To verify that Real-time protection is working and detecting viruses, use the eicar.com test file. This test file is a special, harmless file detectable by all antivirus programs. The file was created by the EICAR institute (European Institute for Computer Antivirus Research) to test the functionality of antivirus programs.

4.1.1.4 What to do if Real-time protection does not work

In this chapter, we describe problem situations that may arise when using Real-time protection, and how to troubleshoot them.

Real-time protection is disabled
If Real-time protection was inadvertently disabled by a user, it will need to be reactivated. To reactivate Real-time protection, navigate to **Setup** > **Antivirus and antispyware** and click the **Enable real-time file system protection** link (to the right) in the main program window. Alternatively, you can enable the Real-time file system protection in the Advanced setup window under **Protection** > **Real-Time Protection** by selecting the **Enable real-time file system protection** option.



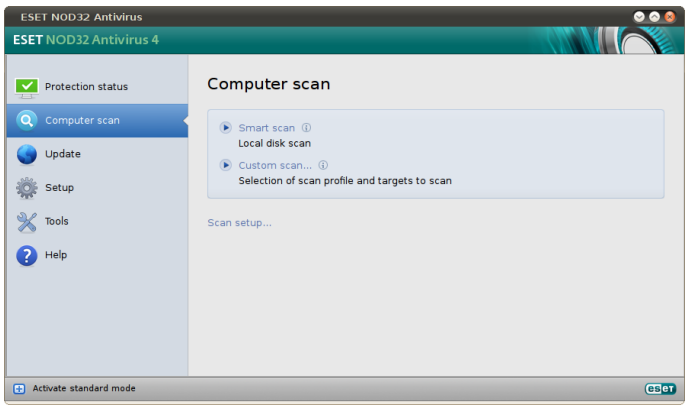
Real-time protection does not detect and clean infiltrations
Make sure that no other antivirus programs are installed on your computer. If two real-time protection shields are enabled at the same time, they may conflict with each other. We recommend that you uninstall any other antivirus programs that may be on your system.

Real-time protection does not start
If Real-time protection is not initiated at system startup, it may be due to conflicts with other programs. If this is the case, please consult ESET's Customer Care specialists.

4.1.2 On-demand computer scan

If you suspect that your computer is infected (it behaves abnormally), run **Computer scan** > **Smart scan** to examine your computer for infiltrations. For maximum protection, computer scans should be run regularly as part of routine security measures, not just run when an infection is suspected. Regular scanning can detect infiltrations that were not detected by the Real-time scanner when they were saved to the disk. This can happen if the Real-time scanner was disabled at the time of infection, or if the virus signature database is not up-to-date.

We recommend that you run an On-demand computer scan at least once a month. Scanning can be configured as a scheduled task from **Tools** > **Scheduler**.



4.1.2.1 Type of scan

Two types of On-demand computer scans are available. **Smart scan** quickly scans the system with no need for further configuration of the scan parameters. **Custom scan** allows you to select any of the predefined scan profiles, as well as choose specific scan targets.

4.1.2.1.1 Smart scan

Smart scan allows you to quickly launch a computer scan and clean infected files with no need for user intervention. Its main advantage is easy operation with no detailed scanning configuration. Smart scan checks all files in all folders and automatically cleans or deletes detected infiltrations. The cleaning level is automatically set to the default value. For more detailed information on types of cleaning, see the section on Cleaning 10.

4.1.2.1.2 Custom scan

Custom scan is optimal if you would like to specify scanning parameters such as scan targets and scanning methods. The advantage of running a Custom scan is the ability to configure the parameters in detail. Different configurations can be saved as user-defined scan profiles, which can be useful if scanning is repeatedly performed with the same parameters.

To select scan targets, select **Computer scan** > **Custom scan** and select specific **Scan Targets** from the tree structure. A scan target can also be more precisely specified by entering the path to the folder or file(s) you wish to include. If you are only interested in scanning the system without additional cleaning actions, select the **Scan without cleaning** option. Furthermore, you can choose from three cleaning levels by clicking **Setup...** > **Cleaning**.

Performing computer scans with Custom scan is recommended for advanced users with previous experience using antivirus programs.

4.1.2.2 Scan targets

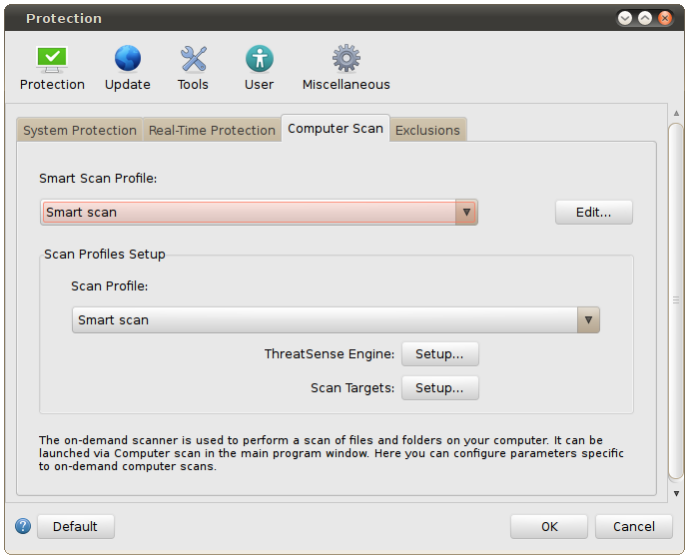
The Scan targets tree structure allows you to select files and folders to be scanned for viruses. Folders may also be selected according to a profile's settings.

A scan target can be more precisely defined by entering the path to the folder or file(s) you wish to include in scanning. Select targets from the tree structure that lists all available folders on the computer.

4.1.2.3 Scan profiles

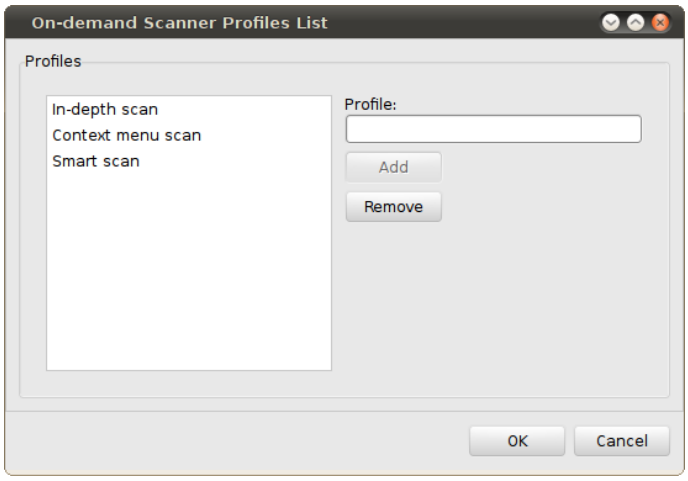
Your preferred scan settings can be saved for future scanning. We recommend that you create a different profile (with various scan targets, scan methods and other parameters) for each regularly used scan.

To create a new profile, go to **Setup** > **Enter application preferences ...** > **Protection** > **Computer Scan** and click **Edit...** next to the list of current profiles.



To help you create a scan profile to fit your needs, see the ThreatSense engine parameters setup 9 section for a description of each parameter of the scan setup.

Example: Suppose that you want to create your own scan profile and the Smart scan configuration is partially suitable, but you do not want to scan runtime packers or potentially unsafe applications and you also want to apply Strict cleaning. In the **On-demand Scanner Profiles List** window, type the profile name, click the **Add** button and confirm by clicking **OK**. Then adjust the parameters to meet your requirements by setting **ThreatSense Engine** and **Scan Targets**.



4.1.3 ThreatSense engine parameters setup

ThreatSense is ESET's proprietary technology consisting of a combination of complex threat detection methods. This technology is proactive, which means it also provides protection during the early hours of the spread of a new threat. It uses a combination of several methods (code analysis, code emulation, generic signatures, virus signatures) which work in concert to significantly enhance system security. The scanning engine is capable of controlling several data streams simultaneously, maximizing the efficiency and detection rate. ThreatSense technology also successfully prevents rootkits.

The ThreatSense technology setup options allow you to specify several scan parameters:

- File types and extensions that are to be scanned
- The combination of various detection methods
- Levels of cleaning, etc.

To enter the setup window, click **Setup** > **Antivirus and antispyware** > **Advanced Antivirus and antispyware protection setup** and then click the **Setup...** button located in the **System Protection**, **Real-Time Protection** and **Computer Scan** wildcards, which all use ThreatSense technology (see below). Different security scenarios could require different configurations. With this in mind, ThreatSense is individually configurable for the following protection modules:

- **System Protection** > Automatic startup file check
- **Real-Time Protection** > Real-time file system protection
- **Computer Scan** > On-demand computer scan

The ThreatSense parameters are specifically optimized for each module, and their modification can significantly influence system operation. For example, changing settings to always scan runtime packers, or enabling advanced heuristics in the Real-time file system protection module could result in a slower system . Therefore, we recommend that you leave the default ThreatSense parameters unchanged for all modules except Computer scan.

4.1.3.1 Objects

The **Objects** section allows you to define which computer files will be scanned for infiltrations.

- **Files** – provides scanning of all common file types (programs, pictures, audio, video files, database files, etc.).
- **Symbolic links** - (On-demand scanner only) scans special type of files that contain a text string that is interpreted and followed by the operating system as a path to another file or directory.
- **Email files** - (not available in Real-time protection) scans special files where email messages are contained.
- **Mailboxes** - (not available in Real-time protection) scans user mailboxes in the system. Incorrect use of this option may result in a conflict with your email client. To learn more about advantages and disadvantages of this option, read the following knowledgebase article.
- **Archives** - (not available in Real-time protection) provides scanning of files compressed in archives (.rar, .zip, .arj, .tar, etc.).
- **Self-extracting archives** - (not available in Real-time protection) scans files which are contained in self-extracting archive files.
- **Runtime packers** - unlike standard archive types, runtime packers decompress in memory, in addition to standard static packers (UPX, yoda, ASPack, FGS, etc.).

4.1.3.2 Options

In the **Options** section, you can select the methods used during a scan of the system for infiltrations. The following options are available:

- **Heuristics** – Heuristics use an algorithm that analyzes the (malicious) activity of programs. The main advantage of heuristic detection is the ability to detect new malicious software which did not previously exist, or was not included in the list of known viruses (virus signatures database).
- **Advanced heuristics** – Advanced heuristics is comprised of a unique heuristic algorithm, developed by ESET, optimized for detecting computer worms and trojan horses written in high-level programming languages. The program's detection ability is significantly higher as a result of advanced heuristics.
- **Potentially unwanted applications** – These applications are not necessarily intended to be malicious, but may affect the performance of your computer in a negative way. Such applications usually require consent for installation. If they are present on your computer, your system behaves differently (compared to the way it behaved before these applications were installed). The most significant changes include unwanted pop-up windows, activation and running of hidden processes, increased usage of system resources, changes in search results, and applications communicating with remote servers.
- **Potentially unsafe applications** – these applications refer to commercial, legitimate software that can be abused by attackers, if it was installed without user's knowledge. The classification includes programs such as remote access tools, which is why this option is disabled by default.

4.1.3.3 Cleaning

The cleaning settings determine the manner in which the scanner cleans infected files. There are 3 levels of cleaning:

- **No cleaning** – Infected files are not cleaned automatically. The program will display a warning window and allow you to choose an action.
- **Standard cleaning** – The program will attempt to automatically clean or delete an infected file. If it is not possible to select the correct action automatically, the program will offer a choice of follow-up actions. The choice of follow-up actions will also be displayed if a predefined action could not be completed.
- **Strict cleaning** – The program will clean or delete all infected files (including archives). The only exceptions are system files. If it is not possible to clean them, you will be offered an action to take in a warning window.

Warning: In the Default Standard cleaning mode, the entire archive file is deleted only if all files in the archive are infected. If the archive also contains legitimate files, it will not be deleted. If an infected archive file is detected in Strict cleaning mode, the entire archive will be deleted, even if clean files are present.

4.1.3.4 Extensions

An extension is the part of the file name delimited by a period. The extension defines the type and content of the file. This section of the ThreatSense parameter setup lets you define the types of files to be excluded from scanning.

By default, all files are scanned regardless of their extension. Any extension can be added to the list of files excluded from scanning. Using the **Add** and **Remove** buttons, you can enable or prohibit scanning of desired extensions.

Excluding files from scanning is sometimes necessary if scanning certain file types prevents the program from functioning properly. For example, it may be advisable to exclude the *.log*, *.cfg* and *.tmp* extensions.

4.1.3.5 Limits

The **Limits** section allows you to specify the maximum size of objects and levels of nested archives to be scanned:

- **Maximum Size:** Defines the maximum size of objects to be scanned. The antivirus module will then scan only objects smaller than the size specified. We do not recommend changing the default value, as there is usually no reason to modify it. This option should only be changed by advanced users who have specific reasons for excluding larger objects from scanning.
- **Maximum Scan Time:** Defines the maximum time allotted for scanning an object. If a user-defined value has been entered here, the antivirus module will stop scanning an object when that time has elapsed, whether or not the scan has finished.
- **Maximum Nesting Level:** Specifies the maximum depth of archive scanning. We do not recommend changing the default value of 10; under normal circumstances, there should be no reason to modify it. If scanning is prematurely terminated due to the number of nested archives, the archive will remain unchecked.
- **Maximum File Size:** This option allows you to specify the maximum file size for files contained in archives (when they are extracted) that are to be scanned. If scanning is prematurely terminated as a result of this limit, the archive will remain unchecked.

If you wish to disable the scanning of specific folders controlled by the system (*/proc* and */sys*), select the **Exclude system control folders from scanning** option (this option is not available for startup scan).

4.1.3.6 Others

With Smart Optimization enabled, settings are optimized to ensure the most efficient level of scanning without compromising scanning speed. The various protection modules scan intelligently, making use of different scanning methods. Smart Optimization is not rigidly defined within the product. The ESET Development Team is continuously implementing new changes which then get integrated into your ESET NOD32 Antivirus via the regular updates. If Smart Optimization is disabled, only the user-defined settings in the ThreatSense core of the particular module are applied when performing a scan.

Scan alternative data streams (On-demand scanner only) Alternate data streams used by the file system are file and folder associations which are invisible from ordinary scanning techniques. Many infiltrations try to avoid detection by disguising themselves as alternative data streams.

Preserve last access timestamp (On-demand scanner only) Check this option to keep the original access time of scanned files instead of updating it (e.g. for use with data backup systems).

4.1.4 An infiltration is detected

Infiltrations can reach the system from various entry points: webpages, shared folders, email or removable computer devices (USB, external disks, CDs, DVDs, diskettes, etc.).

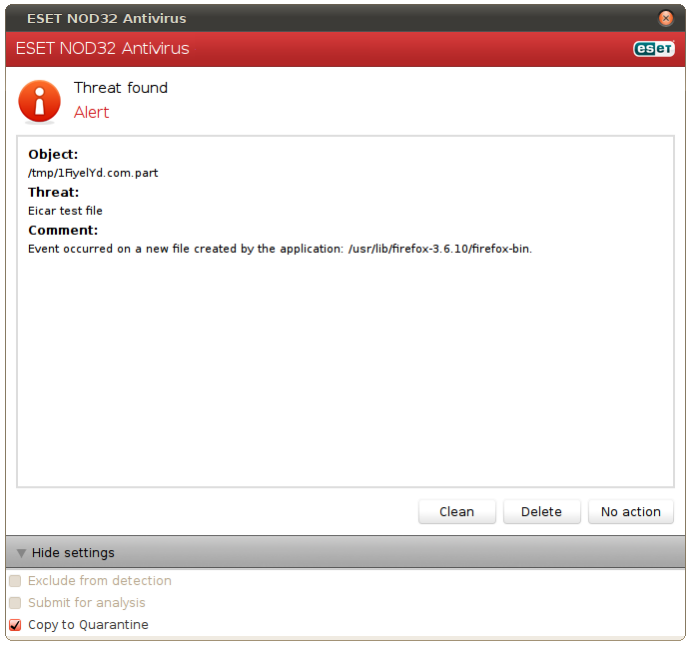
If your computer is showing signs of malware infection, e.g., it is slower, often freezes, etc., we recommend the following steps:

1. Open ESET NOD32 Antivirus and click **Computer scan**.
2. Click **Smart scan** (for more information, see the Smart scan 8 section).
3. After the scan has finished, review the log for the number of scanned, infected and cleaned files.

If you only wish to scan a certain part of your disk, click **Custom scan** and select targets to be scanned for viruses.

As a general example of how infiltrations are handled in ESET NOD32 Antivirus, suppose that an infiltration is detected by the Real-time file system monitor, which uses the default cleaning level. It will attempt to clean or delete the file. If there is no predefined action available for the Real-time protection module, you will be asked to select an option in an alert window. Usually, the options **Clean**, **Delete** and **No action** are available. Selecting **No action** is not recommended, since the infected file(s) would be left untouched. An exception to this is when you are sure that the file is harmless and has been detected by mistake.

Cleaning and deleting – Apply cleaning if a file has been attacked by a virus that has attached malicious code to it. If this is the case, first attempt to clean the infected file in order to restore it to its original state. If the file consists exclusively of malicious code, it will be deleted.



Deleting files in archives – In the default cleaning mode, the entire archive will be deleted only if it contains infected files and no clean files. In other words, archives are not deleted if they also contain harmless clean files. However, use caution when performing a **Strict cleaning** scan – with Strict cleaning the archive will be deleted if it contains at least one infected file, regardless of the status of other files in the archive.

4.2 Updating the program

Regularly updating ESET NOD32 Antivirus is necessary to maintain the maximum level of security. The Update module ensures that the program is always up to date by downloading the most recent virus signature database.

By clicking **Update** from the main menu, you can find the current update status, including the date and time of the last successful update and if an update is needed. To begin the update process manually, click the **Update virus signature database**.

Under normal circumstances, when updates are downloaded properly, the message **Virus signature database is up to date** will appear in the Update window. If the virus signature database cannot be updated, we recommend that you check the update settings 12 - the most common reason for this error is incorrectly entered authentication data (Username and Password) or incorrectly configured connection settings 17.

The Update window also contains the information about the virus signature database version. This numeric indicator is an active link to ESET's website, listing all signatures added during the given update.

NOTE: Your username and password are provided by ESET after purchasing ESET NOD32 Antivirus.

4.2.1 Upgrading to a new build

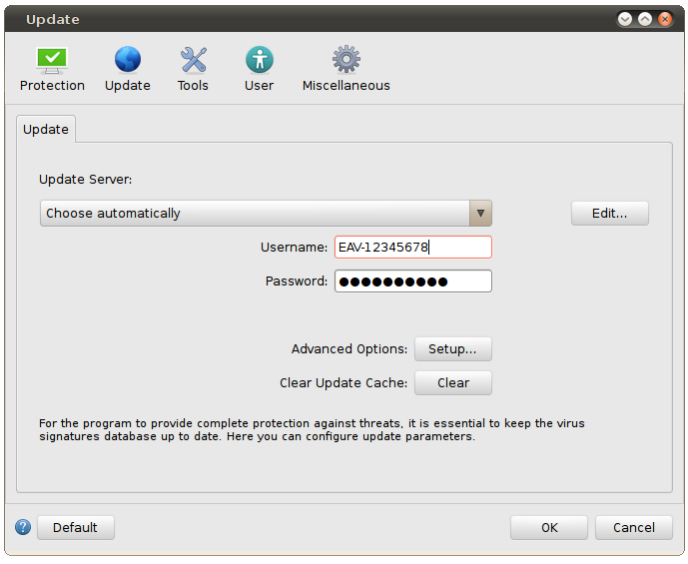
For maximum protection, it is important to use the latest build of ESET NOD32 Antivirus. To check for a new version, click **Update** from the main menu on the left. If a new build is available, a message that says *A new version of the product is available!* will be displayed at the bottom of the window. Click **Learn more...** to display a new window containing the version number of the new build and the changelog.

Click **Download** to download the latest build. Click **Close** to close the window and download the upgrade later.

If you clicked **Download**, the file will be downloaded to your downloads folder (or the default folder set by your browser). When the file has finished downloading, launch the file and follow the installation directions. Your username and password will be automatically transferred to the new installation. It is recommended to check for upgrades regularly, especially when installing ESET NOD32 Antivirus via CD/DVD.

4.2.2 Update setup

The update setup section specifies update source information such as the update servers and authentication data for these servers. By default, the **Update Server** drop-down menu is set to **Choose automatically** to ensure that update files will automatically download from the ESET server with the least network traffic.



The list of available update servers is accessible via the **Update Server** drop-down menu. To add a new update server, click **Edit...** Then enter the address of the new server in the **Update Server** input field and click the **Add** button. Authentication for update servers is based on the **Username** and **Password** generated and sent to you after purchase.

ESET NOD32 Antivirus allows you to set an alternative or failover update server. **Primary** server could be your mirror server and **Secondary** the standard ESET update server. Secondary server must differ from the Primary one, otherwise it will not be used. If you do not specify Secondary **Update Server**, **Username** and **Password**, the secondary update will not work. If you enter Username and Password from your license email and let the program to **Choose automatically** the Update Server, the update will be successful.

To enable the use of test mode (downloads pre-release updates) click the **Setup...** button next to **Advanced Options** and select the **Enable pre-release updates** checkbox. To disable system tray notifications displaying after each successful update, select the **Do not display notification about successful update** checkbox.

To delete all temporarily stored update data, click the **Clear** button next to **Clear Update Cache**. Use this option if you are experiencing difficulty while updating.

4.2.3 How to create update tasks

Updates can be triggered manually by clicking **Update virus signature database** in the primary window displayed after clicking **Update** from the main menu.

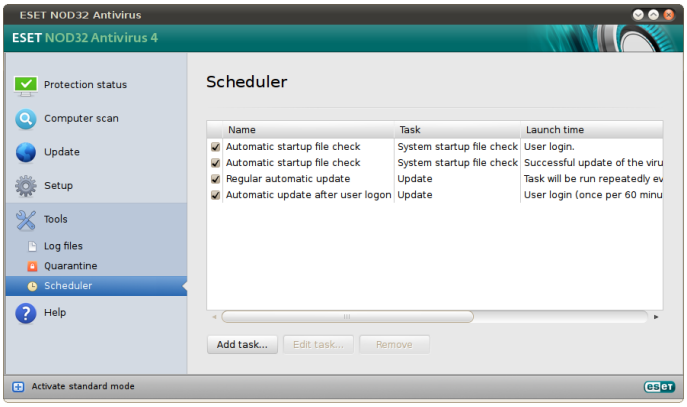
Updates can also be run as scheduled tasks. To configure a scheduled task, click **Tools** > **Scheduler**. By default, the following tasks are activated in ESET NOD32 Antivirus:

- **Regular automatic update**
- **Automatic update after user logon**

Each of the update tasks can be modified to meet your needs. In addition to the default update tasks, you can create new update tasks with a user-defined configuration. For more details about creating and configuring update tasks, see the Scheduler 12 section.

4.3 Scheduler

The **Scheduler** is available if Advanced mode in ESET NOD32 Antivirus is activated. The Scheduler can be found in the ESET NOD32 Antivirus main menu under **Tools**. The **Scheduler** contains a list of all scheduled tasks and configuration properties such as the predefined date, time, and scanning profile used.



By default, the following scheduled tasks are displayed in the Scheduler:

- Regular automatic update
- Automatic update after user logon
- Automatic startup file check after user logon
- Automatic startup file check after successful update of the virus signature database

- Log maintenance (after enabling the **Show system tasks** option in the scheduler setup)

To edit the configuration of an existing scheduled task (both default and user-defined), right-click the task and click **Edit...** or select the desired task you wish to modify and click the **Edit...** button.

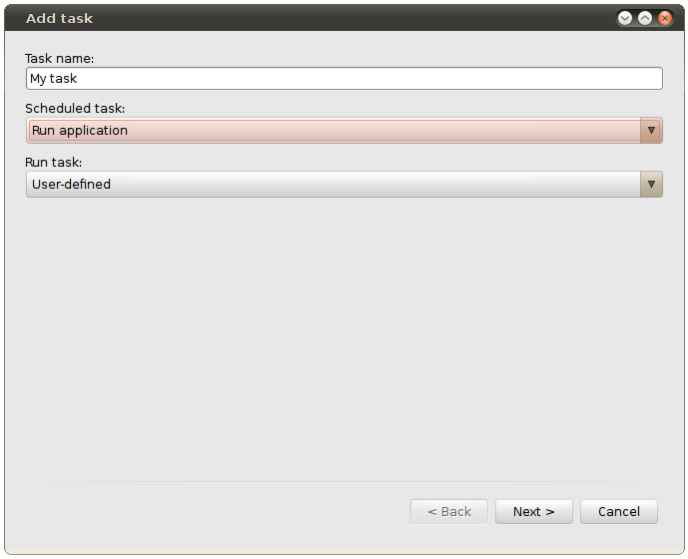
4.3.1 Purpose of scheduling tasks

The Scheduler manages and launches scheduled tasks with predefined configurations and properties. The configuration and properties contain information such as the date and time as well as specified profiles to be used during execution of the task.

4.3.2 Creating new tasks

To create a new task in the Scheduler, click the **Add task...** button or right-click and select **Add...** from the context menu. Five types of scheduled tasks are available:

- **Run application**
- **Update**
- **Log maintenance**
- **On-demand computer scan**
- **System startup file check**



Since Update is one of the most frequently used scheduled tasks, we will explain how to add a new update task.

From the **Scheduled task** drop-down menu, select **Update**. Enter the name of the task into the **Task name** field. Select the frequency of the task from the **Run task** drop-down menu. The following options are available: **User-defined**, **Once**, **Repeatedly**, **Daily**, **Weekly** and **Event triggered**. Based on the frequency selected, you will be prompted with different update parameters. Next, define what action to take if the task cannot be performed or completed at the scheduled time. The following three options are available:

- **Wait until the next scheduled time**
- **Run the task as soon as possible**
- **Run the task immediately if the time since its last execution exceeds specified interval** (the interval can be defined using the **Minimum task interval** option)

In the next step, a summary window with information about the current scheduled task is displayed. Click the **Finish** button.

The new scheduled task will be added to the list of currently scheduled tasks.

The system, by default, contains essential scheduled tasks to ensure correct product functionality. These should not be altered, and are hidden by default. To change this option and make these tasks visible, enter the **Setup** > **Enter application preferences ...** > **Tools** > **Scheduler** and select the **Show system tasks** option.

4.3.3 Creating user-defined task

Date and time of the **User-defined** task has to be entered in year-extended cron format (a string comprising 6 fields separated by white space):

```
minute(0-59) hour(0-23) day of month(1-31) month(1-12) year(1970-2099) day of week(0-7)(Sunday = 0 or 7)
```

Example:

```
30 6 22 3 2012 4
```

Special characters supported in cron expressions:

- asterisk (`*`) - expression will match for all values of the field; e.g. asterisk in the 3rd field (day of month) means every day
- hyphen (`-`) - defines ranges; e.g. `3-9`
- comma (`,`) - separates items of a list; e.g. `1,3,7,8`
- slash (`/`) - defines increments of ranges; e.g. `3-28/5` in the 3rd field (day of month) means 3rd day of the month and then every 5 days.

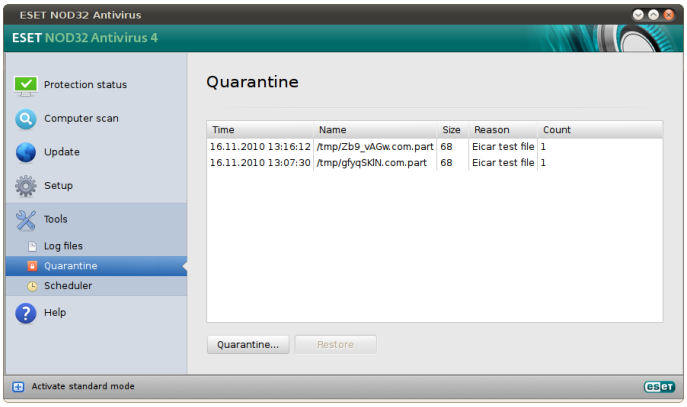
Day names (Monday-Sunday) and month names (January-December) are not supported.

NOTE: If you define both day of month and day of week, command will be executed only when both fields match.

4.4 Quarantine

The main task of the quarantine is to safely store infected files. Files should be quarantined if they cannot be cleaned, if it is not safe or advisable to delete them, or if they are being falsely detected by ESET NOD32 Antivirus.

You can choose to quarantine any file. This is advisable if a file behaves suspiciously but is not detected by the antivirus scanner. Quarantined files can be submitted for analysis to ESET's Threat Lab.



Files stored in the quarantine folder can be viewed in a table which displays the date and time of quarantine, the path to the original location of the infected file, its size in bytes, reason (e.g., added by user…) and number of threats (e.g., if it is an archive containing multiple infiltrations). The quarantine folder with quarantined files (*/var/opt/eset/esets/cache/quarantine*) remains in the system even after uninstalling ESET NOD32 Antivirus. Quarantined files are stored in a safe encrypted form and can be restored again after installing ESET NOD32 Antivirus.

If you wish to automatically scan quarantined files after each virus signature database update, select the **Rescan quarantined files after every update** option in the **Setup** > **Enter application preferences ...** > **Tools** > **Quarantine**.

4.4.1 Quarantining files

ESET NOD32 Antivirus automatically quarantines deleted files (if you have not canceled this option in the alert window). If desired, you can quarantine any suspicious file manually by clicking the **Quarantine...** button. The context menu can also be used for this purpose – right-click in the **Quarantine** window, choose file you want to quarantine and click the **Open** button.

4.4.2 Restoring from Quarantine

Quarantined files can also be restored to their original location. Use the **Restore** button for this purpose; Restore is also available from the context menu by right-clicking on the given file in the **Quarantine** window, then clicking **Restore**. The context menu also offers the option **Restore to...**, which allows you to restore a file to a location other than the one from which it was deleted.

4.4.3 Submitting file from Quarantine

If you have quarantined a suspicious file that was not detected by the program, or if a file was incorrectly evaluated as infected (e.g., by heuristic analysis of the code) and subsequently quarantined, please send the file to ESET's Threat Lab. To submit a file from quarantine, right-click the file and select **Submit file for analysis** from the context menu.

4.5 Log files

The Log files contain information about all important program events that have occurred and provide an overview of detected threats. Logging acts as an essential tool in system analysis, threat detection and troubleshooting. Logging is performed actively in the background with no user interaction. Information is recorded based on the current log verbosity settings. It is possible to view text messages and logs directly from the ESET NOD32 Antivirus environment, as well as to archive logs.

Log files are accessible from the ESET NOD32 Antivirus main menu by clicking **Tools** > **Log files**. Select the desired log type using the **Log** drop-down menu at the top of the window. The following logs are available:

1. **Detected threats** – Use this option to view all information about events related to the detection of infiltrations.
2. **Events** – This option is designed for system administrators and users to solve problems. All important actions performed by ESET NOD32 Antivirus are recorded in the Event logs.
3. **Computer scan** – Results of all completed scans are displayed in this window. Double-click any entry to view details of the respective On-demand computer scan.

In each section, the displayed information can be directly copied to the clipboard by selecting the entry and clicking on the **Copy** button.

4.5.1 Log maintenance

The logging configuration for ESET NOD32 Antivirus is accessible from the main program window. Click **Setup** > **Enter application preferences ...** > **Tools** > **Log Files**. You can specify the following options for log files:

- **Delete old log records automatically** - log entries older than the specified number of days are automatically deleted.
- **Optimize log files automatically** - enables automatic defragmentation of log files if the specified percentage of unused records has been exceeded.

To configure the **Log Records Default Filter** click the **Edit...** button and select/deselect log types as required.

4.5.2 Log filtering

Logs store information about important system events. The log filtering feature allows you to display records about a specific type of event.

The most frequently used log types are listed below:

- **Critical warnings** – critical system errors (e.g., Antivirus protection failed to start)
- **Errors** - error messages such as "*Error downloading file*" and critical errors
- **Warnings** – warning messages
- **Informative records** - informative messages including successful updates, alerts, etc.
- **Diagnostic records** - information needed for fine-tuning the program as well as all records described above.
- **All filters** - use this checkbox to select/deselect all log types listed above.

4.6 User interface

The user interface configuration options in ESET NOD32 Antivirus allow you to adjust the working environment to fit your needs. These configuration options are accessible from the **Setup** > **Enter application preferences ...** > **User** > **Interface**.

In this section, the Advanced mode option gives users the ability to allow toggling to Advanced mode. Advanced mode displays more detailed settings and additional controls for ESET NOD32 Antivirus.

To enable the startup splash screen functionality, select the **Show splash-screen at startup** option.

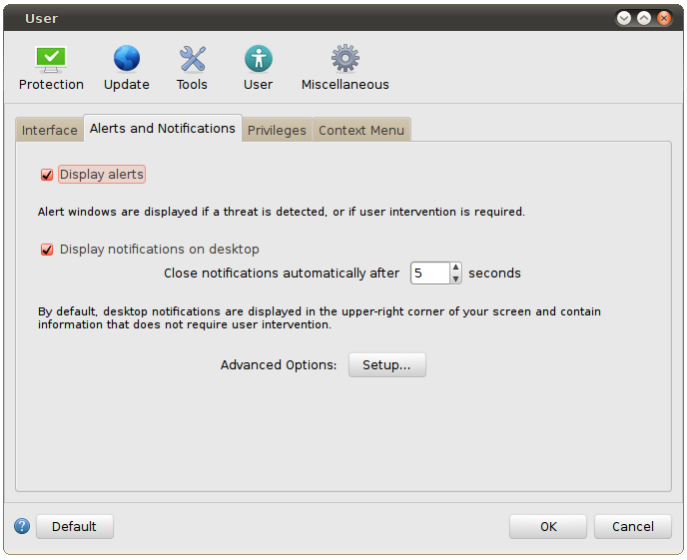
In the **Use standard menu** section you can select the **In standard mode/In advanced mode** options to enable the use of the standard menu in the main program window in the respective display mode(s).

To enable tool tips, select the **Show tooltips** option. The **Show hidden files** option allows you to see and select hidden files in the **Scan Targets** setup of a **Computer scan**.

4.6.1 Alerts and notifications

The **Alerts and Notifications** section allows you to configure how threat alerts and system notifications are handled in ESET NOD32 Antivirus.

Disabling the **Display alerts** option will cancel all alert windows and is only suitable in specific situations. For most users, we recommend that this option be left to its default setting (enabled).



Selecting the **Display notifications on desktop** option will enable alert windows that do not require user interaction to display on desktop (by default in the upper-right corner of your screen). You can define the period for which a notification will be displayed by adjusting the **Close notifications automatically after** X **seconds** value.

4.6.1.1 Alerts and notifications advanced setup

Display only notifications requiring user interaction
With this option, you can toggle the display of messages requiring user interaction.

Display only notifications requiring user interaction when running applications in full screen mode
This option is useful while doing presentations, playing games or doing other activities that require the entire screen.

4.6.2 Privileges

ESET NOD32 Antivirus settings can be very important to your organization's security policy. Unauthorized modifications may endanger the stability and protection of your system. Consequently, you can choose which users will have permission to edit the program configuration.

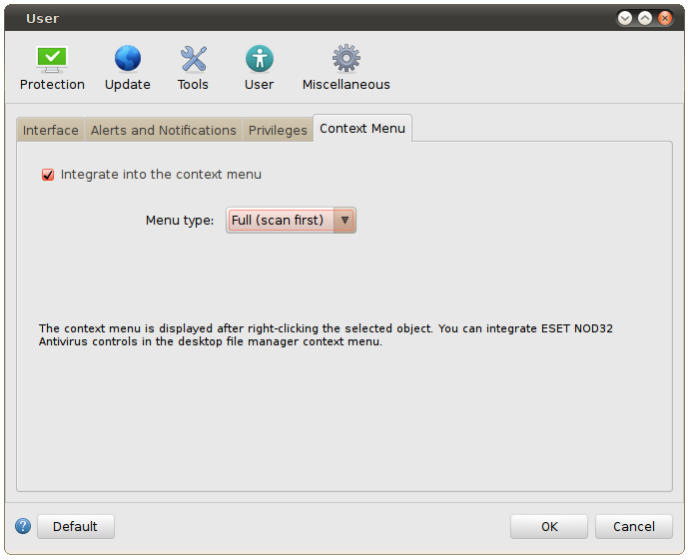
To specify privileged users, enter the **Setup** > **Enter application preferences ...** > **User** > **Privileges**.

In order to provide maximum security for your system, it is essential that the program be correctly configured. Unauthorized modifications could result in the loss of important data. To set a list of privileged users, simply select them from the **Users** list on the left side and click the **Add** button. To remove a user, simply select their name from the **Privileged Users** list on the right side and click **Remove**.

NOTE: If the list of privileged users is empty, all users of the system will have permission to edit the program settings.

4.6.3 Context menu

The context menu integration can be enabled in the **Setup** > **Enter application preferences ...** > **User** > **Context Menu** section by enabling the **Integrate into the context menu** check box.



NOTE: To enable context menu integration, make sure the nautilius-actions extension is installed.

4.7 ThreatSense.NET

The ThreatSense.NET Early Warning System keeps ESET immediately and continuously informed about new infiltrations. The bidirectional ThreatSense.NET Early Warning System has a single purpose – to improve the protection that we can offer you. The best way to ensure that we see new threats as soon as they appear is to "link" to as many of our customers as possible and use them as our Threat Scouts. There are two options:

1. You can decide not to enable the ThreatSense.NET Early Warning System. You will not lose any functionality in the software, and you will still receive the best protection that we offer.
2. You can configure the ThreatSense.NET Early Warning System to submit anonymous information about new threats and where the new threatening code is contained. This file can be sent to ESET for detailed analysis. Studying these threats will help ESET update its database of threats and improve the program's threat detection ability.

The ThreatSense.NET Early Warning System will collect information about your computer related to newly-detected threats. This information may include a sample or copy of the file in which the threat appeared, the path to that file, the filename, the date and time, the process by which the threat appeared on your computer and information about your computer's operating system.

While there is a chance this may occasionally disclose some information about you or your computer (usernames in a directory path, etc.) to ESET's Threat Lab, this information will not be used for ANY purpose other than to help us respond immediately to new threats.

The ThreatSense.NET setup is accessible from the Advanced Setup window, under **Tools** > **ThreatSense.NET**. Select the **Enable ThreatSense.NET Early Warning System** option to activate and then click the **Setup...** button beside the Advanced Options heading.

4.7.1 Suspicious files

The Suspicious files option allows you to configure the manner in which threats are submitted to ESET's Threat Lab for analysis.

If you find a suspicious file, you can submit it to our Threat Labs for analysis. If it is a malicious application, its detection will be added to the next virus signature database update.

Submission of Suspicious Files - You can choose to send these files **During update**, meaning they will be submitted to ESET's Threat Lab during a regular virus signature database update. Alternatively, you can choose to send them **As soon as possible** – this setting is suitable if a permanent Internet connection is available.

If you do not want any files to be submitted, select the **Do not submit** option. Selecting not to submit files for analysis does not affect submission of statistical information, which is configured in a separate area.

The ThreatSense.NET Early Warning System collects anonymous information about your computer related to newly detected threats. This information may include the name of the infiltration, the date and time it was detected, the ESET security product version, your operating system version and the location setting. The statistics are typically delivered to ESET's servers once or twice a day.

Below is an example of a statistical package submitted:

```
# utc_time=2009-04-14 07:21:28
# country="Slovakia"
# language="ENGLISH"
# osver=2.6.18-128.e5
# engine=5417
# components=2.50.2
# moduleid=0x4e4f4d41
# filesize=28368
# filename=/home/user/Documents/Incoming/rdgFR1463
[1].zip
```

Submission of Anonymous Statistical Information – You can define when the statistical information will be submitted. If you choose to submit **As soon as possible**, statistical information will be sent immediately after it is created. This setting is suitable if a permanent Internet connection is available. If the **During update** option is selected, all statistical information will be submitted during the update following its collection.

If you would not like to send anonymous statistical information, you can select the **Do not submit** option.

Exclusion Filter – This option allows you to exclude certain files/folders from submission. For example, it may be useful to exclude files which may carry confidential information, such as documents or spreadsheets. The most common file types are excluded by default (*.doc*, etc.). You can add file types to the list of excluded files.

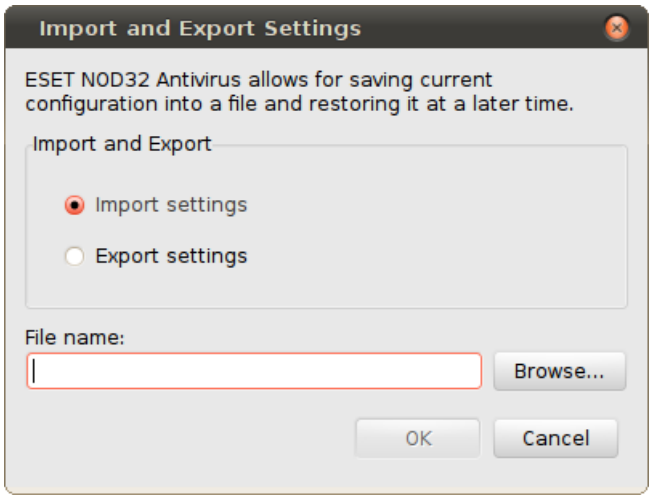
Contact Email (optional) – Your email can be sent with any suspicious files and may be used to contact you if further information is required for analysis. Please note that you will not receive a response from ESET unless more information is needed.

5. Advanced user

5.1 Import and export settings

Importing and exporting configurations of ESET NOD32 Antivirus is available in Advanced mode under **Setup**.

Both Import and Export use archive files to store the configuration. Import and export are useful if you need to backup the current configuration of ESET NOD32 Antivirus to be able to use it later. The export settings option is also convenient for users who wish to use their preferred configuration of ESET NOD32 Antivirus on multiple systems - they can easily import the configuration file to transfer the desired settings.



5.1.1 Import settings

Importing a configuration is very easy. From the main menu, click **Setup** > **Import and export settings ...** and then select the **Import settings** option. Enter the name of the configuration file or click the **Browse...** button to browse for the configuration file you wish to import.

5.1.2 Export settings

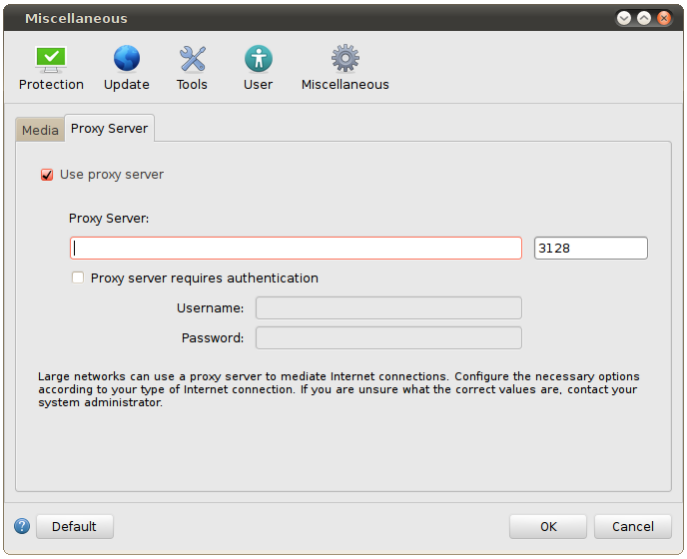
The steps to export a configuration are very similar. From the main menu, click **Setup** > **Import and export settings ...** Select the **Export settings** option and enter the name of the configuration file. Use the browser to select a location on your computer to save the configuration file.

5.2 Proxy server setup

Proxy server settings can be configured under **Miscellaneous** > **Proxy Server**. Specifying the proxy server at this level defines global proxy server settings for all ESET NOD32 Antivirus functions. Parameters here will be used by all modules requiring connection to the Internet.

To specify proxy server settings for this level, select the **Use proxy server** check box and then enter the address of the proxy server into the **Proxy Server** field, along with the port number of the proxy server.

If communication with the proxy server requires authentication, select the **Proxy server requires authentication** checkbox and enter a valid **Username** and **Password** into the respective fields.



5.3 Removable media blocking

Removable media (i.e., CD or USB key) may contain malicious code and put your computer at risk. To block removable media, check the **Enable removable media blocking** option. To allow access to certain types of media, uncheck desired media volumes.

6. Glossary

6.1 Types of infiltrations

An Infiltration is a piece of malicious software trying to enter and/or damage a user's computer.

6.1.1 Viruses

A computer virus is an infiltration that corrupts existing files on your computer. Viruses are named after biological viruses, because they use similar techniques to spread from one computer to another.

Computer viruses mainly attack executable files, scripts and documents. To replicate, a virus attaches its "body" to the end of a target file. In short, this is how a computer virus works: after execution of the infected file, the virus activates itself (before the original application) and performs its predefined task. Only after that is the original application allowed to run. A virus cannot infect a computer unless a user, either accidentally or deliberately, runs or opens the malicious program.

Computer viruses can range in purpose and severity. Some of them are extremely dangerous because of their ability to purposely delete files from a hard drive. On the other hand, some viruses do not cause any damage – they only serve to annoy the user and demonstrate the technical skills of their authors.

It is important to note that viruses (when compared to trojans or spyware) are increasingly rare because they are not commercially enticing for malicious software authors. Additionally, the term "virus" is often used incorrectly to cover all types of infiltrations. This usage is gradually being overcome and replaced by the new, more accurate term "malware" (malicious software).

If your computer is infected with a virus, it is necessary to restore infected files to their original state – i.e., to clean them by using an antivirus program.

Examples of viruses are: *OneHalf*, *Tenga* and *Yankee Doodle*.

6.1.2 Worms

A computer worm is a program containing malicious code that attacks host computers and spreads via a network. The basic difference between a virus and a worm is that worms have the ability to replicate and travel by themselves – they are not dependent on host files (or boot sectors). Worms spread through email addresses in your contact list or exploit security vulnerabilities in network applications.

Worms are therefore much more viable than computer viruses. Due to the wide availability of the Internet, they can spread across the globe within hours of their release – in some cases, even in minutes. This ability to replicate independently and rapidly makes them more dangerous than other types of malware.

A worm activated in a system can cause a number of inconveniences: It can delete files, degrade system performance, or even deactivate programs. The nature of a computer worm qualifies it as a "means of transport" for other types of infiltrations.

If your computer is infected with a worm, we recommend you delete the infected files because they likely contain malicious code.

Examples of well-known worms are: *Lovsan/Blaster*, *Stration/Warezov*, *Bagle* and *Netsky*.

6.1.3 Trojan horses

Historically, computer trojan horses have been defined as a class of infiltrations which attempt to present themselves as useful programs, tricking users into letting them run. Today, there is no longer a need for trojan horses to disguise themselves. Their sole purpose is to infiltrate as easily as possible and accomplish their malicious goals. "Trojan horse" has become a very general term describing any infiltration not falling under any specific class of infiltration.

Since this is a very broad category, it is often divided into many subcategories:

- Downloader – A malicious program with the ability to download other infiltrations from the Internet.
- Dropper – A type of trojan horse designed to drop other types of malware onto compromised computers.
- Backdoor – An application which communicates with remote attackers, allowing them to gain access to a system and to take control of it.
- Keylogger – (keystroke logger) – A program which records each keystroke that a user types and sends the information to remote attackers.
- Dialer – Dialers are programs designed to connect to premium-rate numbers. It is almost impossible for a user to notice that a new connection was created. Dialers can only cause damage to users with dial-up modems, which are no longer regularly used.
- Trojan horses usually take the form of executable files. If a file on your computer is detected as a trojan horse, we recommend deleting it, since it most likely contains malicious code.

Examples of well-known trojans are: *NetBus*, *Trojandownloader.Small.ZL*, *Slapper*.

6.1.4 Adware

Adware is a shortened term for advertising-supported software. Programs displaying advertising material fall under this category. Adware applications often automatically open a new pop-up window containing advertisements in an Internet browser, or change the browser's home page. Adware is frequently bundled with freeware programs, allowing creators of freeware programs to cover development costs of their (usually useful) applications.

Adware itself is not dangerous – users may only be bothered by the advertisements. The danger lies in the fact that adware may also perform tracking functions (as spyware does).

If you decide to use a freeware product, please pay particular attention to the installation program. The installer will most likely notify you of the installation of an extra adware program. Often you will be allowed to cancel it and install the program without adware.

Some programs will not install without adware, or their functionality will be limited. This means that adware may often access the system in a "legal" way, because users have agreed to it. In this case, it is better to be safe than sorry. If there is a file detected as adware on your computer, it is advisable to delete it, since there is a high probability that it contains malicious code.

6.1.5 Spyware

This category covers all applications which send private information without user consent/awareness. Spyware uses tracking functions to send various statistical data such as a list of visited websites, email addresses from the user's contact list, or a list of recorded keystrokes.

The authors of spyware claim that these techniques aim to find out more about users' needs and interests and allow better-targeted advertisement. The problem is that there is no clear distinction between useful and malicious applications and no one can be sure that the retrieved information will not be misused. The data obtained by spyware applications may contain security codes, PINs, bank account numbers, etc. Spyware is often bundled with free versions of a program by its author in order to generate revenue or to offer an incentive for purchasing the software. Often, users are informed of the presence of spyware during a program's installation to give them an incentive to upgrade to a paid version without it.

Examples of well-known freeware products which come bundled with spyware are client applications of P2P (peer-to-peer) networks. Spyfalcon or Spy Sheriff (and many more) belong to a specific spyware subcategory – they appear to be antispyware programs, but in fact they are spyware programs themselves.

If a file is detected as spyware on your computer, we recommend deleting it, since there is a high probability that it contains malicious code.

6.1.6 Potentially unsafe applications

There are many legitimate programs whose function is to simplify the administration of networked computers. However, in the wrong hands they may be misused for malicious purposes. ESET NOD32 Antivirus provides the option to detect such threats.

"Potentially unsafe applications" is the classification used for commercial, legitimate software. This classification includes programs such as remote access tools, password-cracking applications, and keyloggers (a program that records each keystroke a user types).

If you find that there is a potentially unsafe application present and running on your computer (and you did not install it), please consult your network administrator or remove the application.

6.1.7 Potentially unwanted applications

Potentially unwanted applications are not necessarily intended to be malicious, but may affect the performance of your computer in a negative way. Such applications usually require consent for installation. If they are present on your computer, your system behaves differently (compared to the way it behaved before their installation). The most significant changes are:

- new windows you haven't seen previously are opened
- activation and running of hidden processes
- increased usage of system resources
- changes in search results
- application communicates with remote servers.